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Datasheet for the decision of 11 February 2025

Case Number: T 1135/24 - 3.5.05

Application Number: 17720271.0

Publication Number: 3437414

IPC: H04W72/12, H04W72/04

Language of the proceedings: EN

Title of invention:
A wireless transmit/receive unit and method performed by a wireless transmit/receive unit in a wireless communication network

Applicant:
InterDigital Patent Holdings, Inc.

Headword:
Mapping of logical channels/INTERDIGITAL

Relevant legal provisions:
EPC Art. 116(1), 123(2)
RPBA 2020 Art. 12(8)

Keyword:
Decision in written proceedings - (yes): no oral proceedings requested
Added subject-matter - main and auxiliary request (yes)

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Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0

Case Number: T 1135/24 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 11 February 2025

Appellant: (Applicant)	InterDigital Patent Holdings, Inc. 200 Bellevue Parkway, Suite 300 Wilmington, DE 19809 (US)
Representative:	AWA Sweden AB Stortorget 17 252 20 Helsingborg (SE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 March 2024 refusing European patent application No. 17720271.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	J. Eraso Helguera
	C. Heath

Summary of Facts and Submissions

I. The appellant lodged an appeal against the decision of the examining division to refuse the present European patent application for added subject-matter (Article 123(2) EPC) with respect to a main request and an auxiliary request.

II. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of either the **main request** or the **auxiliary request** on which the decision under appeal is based.

III. No oral proceedings were requested (Article 116(1) EPC). This decision is thus handed down in writing (Article 12(8) RPBA).

IV. Claim 1 of the **main request** reads as follows:

"A wireless transmit/receive unit (WTRU) comprising:
a processor configured to:
determine requirements associated with each of a plurality of logical channels;
determine, based on downlink control information, DCI, characteristics associated with an uplink transmission, the uplink transmission being associated with a spectrum operating mode, SOM, wherein the SOM is associated with a transmission length, and wherein the SOM comprises a mode of operation according to which the WTRU is configured to perform one or more transmissions including at least the uplink transmission;
select one or more of the plurality of logical channels for multiplexing in a transport block, TB, in

accordance with the SOM associated with the uplink transmission based on the one or more of the logical channels being associated with one or more latency requirements that are met by the transmission length of the SOM associated with the uplink transmission; and

a transmitter configured to transmit the uplink transmission according to the SOM, the uplink transmission comprising uplink data associated with the selected one or more of the plurality of logical channels."

Claim 1 of the **auxiliary request** reads as follows:

"A wireless transmit/receive unit (WTRU) comprising:

a processor configured to:

determine respective latency requirements associated with each of a plurality of logical channels;

determine, based on downlink control information, DCI, characteristics associated with a spectrum operating mode, SOM, wherein the SOM is associated with a transmission length, and wherein the SOM comprises a mode of operation according to which the WTRU is configured to perform one or more transmissions including at least an uplink transmission;

compare, for each logical channel of the plurality of logical channels, the respective latency requirement for the logical channel to the transmission length of the SOM;

determine that one or more of the plurality of logical channels can be multiplexed in a transport block, TB, in accordance with the SOM associated with the uplink transmission, based on the respective latency requirements of the one or more of the logical channels meeting the transmission length of the SOM associated with the uplink transmission; and

a transmitter configured to transmit the uplink transmission according to the SOM, the uplink transmission comprising uplink data associated with the selected one or more of the plurality of logical channels."

Reasons for the Decision

1. MAIN REQUEST

Claim 1 of the **main request** relates to a WTRU (wireless transmit/receive unit) comprising a data processor configured, *inter alia*, to (board's labelling and emphasis):

(a) select one or more of the plurality of logical channels (LCHs) for multiplexing in a transport block (TB) in accordance with the spectrum operating mode (SOM) associated with the uplink transmission, based on the one or more LCHs being associated with one or more latency requirements that are met by the transmission length of the SOM associated with the uplink transmission.

1.1 Claim 1 - added subject-matter (Article 123(2) EPC)

1.1.1 In Reasons 27 of the decision under appeal, the examining division found that only paragraph [0164] as filed provided a link between the selection of an "LCH" and a "SOM". Paragraph [0164] stated that the WTRU might determine the mapping of an LCH to a SOM based on compatible LCH requirements and/or one or more SOM characteristics. But of the many parameters that the SOM might be associated with, the claimed feature related to only the latency requirements. Furthermore,

claim 1 did not refer to the minimum latency of the SOM as discussed in paragraph [0163].

1.1.2 The appellant submitted that paragraph [0162] as filed clearly stated that "[t]he WTRU may **determine set of LCH** that may be **multiplexed together in a given transport block** in a given SOM" (appellant's emphasis). Paragraph [0164] as filed was therefore **not** the only paragraph that provided a link between the selection of an LCH and a SOM. Further, paragraph [0162] clearly stated that the WTRU **determines a set of LCH** (appellant's emphasis) that can be multiplexed in a TB in a given SOM. By determining the set of LCHs that could be multiplexed, the WTRU could be said to select those LCHs for multiplexing.

Moreover, paragraph [0162], 3rd and 4th sentences, as filed further stated that "[t]he WTRU may determine, for an LCH, whether the **characteristics of a certain SOM meets the LCH requirements**. The WTRU may **determine a (e.g., a single) SOM** for an (e.g., one or more, or each) **LCH**" (appellant's emphasis). This provided further basis for the WTRU selecting one or more LCHs for multiplexing based on the latency requirements and the transmission length of the SOM.

Finally, the appellant noted that, while claim 1 did not refer to the "minimum latency" of the SOM, paragraph [0163] as filed further stated that "the WTRU may compare the latency requirement of a LCH and the minimum latency of a SOM based on e.g., **the TTI length**" or transmission length (appellant's emphasis). Thus, the application as filed had basis for selecting LCHs based on latency requirements being met by the transmission length of the SOM. Further basis could be found in paragraph [0146], which stated that "[f]or

example, a 10ms TTI SOM might not be able to reach a 1ms latency requirement, and/or might not be assigned to the channel carrying that traffic", which provided an example of the technical problem to which claims 1 and 8 provided a solution.

1.1.3 The appellant's argumentation is not convincing.

Paragraph [0163] as filed discloses that the WTRU may compare the "latency requirement" of an LCH and the "minimum latency" of a SOM. Moreover, the "minimum latency" of a SOM is based on e.g. the TTI length, the HARQ feedback delay and/or other parameters. That is, according to the original disclosure, the "minimum latency" of a SOM, which is calculated by taking into account different parameters, should be compared with the "latency requirement" of the LCH. Logically, a mapping can only take place when the "minimum latency" of a SOM is less than or equal to the "latency requirement" of the LCH. In line with this requirement, the disclosure of paragraph [0146] as filed exemplifies that "a 10ms TTI SOM might not be able to reach a 1ms latency requirement". Certainly, in this specific case, the TTI value already indicates that the "minimum latency" of the SOM "might not be" below the "1ms latency requirement". The reason is that, if the TTI of the SOM is 10ms, the "minimum latency" might be 10ms or higher. So, if the "latency requirements" of the LCH are **not met** by the TTI of the SOM, they "might not be met" by the "minimum latency" of the SOM either and the LCH should **not** be selected.

But this is not what **feature (a)** claims. In fact, this feature states, in positive terms, that the selection of the one or more LCHs is based on the "latency requirements" of the one or more LCHs being **met** by the

"transmission length" of the SOM. In other words: according to the application as filed, the TTI of the SOM must not be higher than the "latency requirement" of the LCH. This is a **necessary** condition: if it is not met, there could be no mapping, because the "minimum latency" of the SOM is based on - rather than the same as - the TTI of the SOM. But if it is met, the HARQ feedback delay and/or other parameters might still be needed to determine the "minimum latency" of the SOM.

1.1.4 In summary, according to the original disclosure, it is the "minimum latency" of the SOM that needs to be considered. However, as explained by the examining division in its decision, **feature (a)** omits any consideration of the "minimum latency" of the SOM and replaces it by the "transmission length" of the SOM. This constitutes an undue generalisation of the original teaching, since the application as filed does not disclose under which specific circumstances the "transmission length" should be the same as the "minimum latency".

1.2 Consequently, the main request is not allowable under Article 123(2) EPC.

2. AUXILIARY REQUEST

In claim 1 of the **auxiliary request**, feature (a) has been replaced by the following features (board's outline and emphasis):

(b) compare, for each LCH of the plurality of LCHs, the respective latency requirement for the LCH to the transmission length of the SOM;

(c) determine that one or more of the plurality of LCHs can be multiplexed in a TB, in accordance with the SOM associated with the uplink transmission, based on the respective latency requirements of the one or more of the LCHs meeting the transmission length of the SOM associated with the uplink transmission.

2.1 Claim 1 - added subject-matter (Article 123(2) EPC)

2.1.1 The appellant submitted that the basis for **features (b) and (c)** of present claim 1 could be found in, for example, paragraphs [0162] to [0164] of the application as filed. According to those paragraphs, the WTRU might determine a set of LCHs that might be multiplexed together in a given TB in a given SOM. This corresponded to **feature (c)**. The WTRU could make this determination based on LCH requirements (i.e. "latency requirements") and the characteristics of the SOM (i.e. the "minimum latency" of the SOM, which is in turn based on the "transmission length"). Paragraph [0163] provided a full example of how such a determination could be made and noted that "[i]n such scenarios, among others, the WTRU may determine that the LCH may be mapped to that particular SOM". Furthermore, the original application clearly and unambiguously disclosed the use of the "transmission length" (i.e. the TTI length) and the "latency requirement" of an LCH. As both the "transmission length" and the "latency requirement" related to an amount of time needed to transmit an uplink transmission, a person skilled in the art would have understood that it would make sense to compare such parameters where it might not make sense to compare, for example, the "latency requirement" of an LCH with a SOM characteristic that is unrelated to an amount of time (e.g. a specific initial power level or a specific waveform type). For

example, paragraph [0146] as filed stated that "a 10ms TTI SOM might not be able to reach a 1ms latency requirement, and/or might not be assigned to the channel carrying that traffic". To avoid such a scenario required comparing the "transmission length" of the SOM with the "latency requirement" of the LCH.

2.1.2 These arguments are not convincing, either. The appellant refers to the same paragraphs of the application as filed as used for feature (a) of claim 1 of the main request. Yet, **features (b) and (c)** still omit the "minimum latency" of the SOM. Thus, the board agrees with the examining division that these features fail to overcome the objections raised against claim 1 of the main request (see Reasons 33 of the decision under appeal). Consequently, the board's considerations made in point 1.1.3 above apply *mutatis mutandis*.

2.2 Hence, the auxiliary request is not allowable under Article 123(2) EPC either.

3. Since there is no allowable claim request on file, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated